

The rejection of Claims 1-26 under 35 U.S.C. § 103(a) over Sogabe is traversed below. Further new Claim 27 is neither disclosed and/or suggested by Sogabe.

The present invention relates to a method of preventing whole fish from browning or darkening by treating the whole fish with an aqueous alkali solution from a compound selected from the group consisting of sodium hydroxide, potassium hydroxide, potassium hydroxide, calcium hydroxide, calcium oxide, magnesium carbonate, ammonium carbonate, sodium carbonate, sodium hydrogen carbonate, potassium hydrogen carbonate, and combinations thereof (see Claim 1).

Sogabe discloses a method of color-developing a surface of a crustacean's stripped body so that the body is colored red (see the Abstract, column 2, lines 48-59, column 9, lines 1-6, and Claim 1). Sogabe discloses that it is necessary to contact an alkaline aqueous solution with a carotenoid pigment that is present within the flesh of the crustacean's body in order to obtain a red color on the crustacean's body (see the Abstract, column 2, lines 48-59, column 9, lines 1-6, and Claim 1). Further, Sogabe discloses that the prevention of dark spots from appearing on the surface of a strip body of a crustacean is due to exposing the body of the crustacean to an alkaline aqueous solution having a pH value in a range of 10-14 and requires the development of a color of the carotenoid pigment into red (See column 2, lines 28-59). Therefore, Sogabe discloses that the presence of a carotenoid pigment in the body of the crustacean is critical to the prevention of dark spots on such a body when exposed to the alkali solution (see the Abstract, column 2, lines 28-59, column 9, lines 1-6, and Claim 1).

In contrast, the whole fish, or fry, of the present invention does not contain a carotenoid pigment in its flesh. Accordingly, the whole fish of the present invention can not be color-developed into a red color. Further, fish are members of the Phylum *Chordata*,

while crustacea are members of the Phylum *Arthropoda* (see the attached pages from the National Center for Biotechnology Information's Taxonomy Browser (May 2000, version)). Therefore, the fish of the present application is not the crustacean disclosed by Sogabe. Since Sogabe teaches a method of color developing a carotenoid pigment in the flesh of crustacea, and the fish of the present application are not even members of the same Phylum with crustacea and do not contain such pigment, it would not be obvious to use the method of Sogabe to prevent darkening or browning of the flesh of whole fish. Accordingly, Sogabe fails to disclose or suggest the claimed invention, and withdrawal of this ground of rejection is respectfully requested.

The rejection of Claims 1-26 under 35 U.S.C. § 103(a) as being unpatentable over Sogabe in view of Bender et al is traversed below.

Bender et al describe a process for treating fish and shellfish with a solution of trialkali metal orthophosphate to prevent the growth of microorganisms (see column 3, line 39). Bender et al fail to describe treating a fish with a solution of sodium hydroxide, potassium hydroxide, calcium hydroxide, calcium oxide, magnesium carbonate, ammonium carbonate, sodium carbonate, sodium hydrogen carbonate, potassium hydrogen carbonate, or combinations thereof. Therefore, Sogabe in view of Bender et al discloses that crustacea may be treated with trialkali metal orthophosphates in order to color develop carotenoid pigment in the flesh of such crustacea. As discussed above, it would not have been obvious to perform the process of Sogabe on a whole fish since whole fish do not contain the carotenoid pigment that is essential to the process disclosed by Sogabe, and such fish are in a very different Phylum than crustacea.

In addition, it would not have been obvious to substitute one of the alkali solutions of the present invention for the trialkali metal orthophosphates in Bender et al because trialkali

metal orthophosphates are not homologs of sodium hydroxide, potassium hydroxide, calcium hydroxide, calcium oxide, magnesium carbonate, ammonium carbonate, sodium carbonate, sodium hydrogen carbonate, or potassium hydrogen carbonate. The Federal Circuit has defined the parameters that may be considered in determining the proper use of chemical structure as the basis for obviousness rejections under 35 U.S.C. § 103 in In re Jones, 21 USPQ2d 1941 (Fed. Cir. 1992), attached. The court cited the following examples of relationships that have given rise to a *prima facie* case of obviousness:

triorthoesters and tetraorthoesters;  
stereoisomers;  
adjacent homologs and structural isomers; and  
acid and ethyl ester (Id., at 1943).

The court went further in determining that a cyclic chemical structure cannot be viewed as a homolog of an acyclic structure in determining that acyclic ammonium salts are quite different than that of cyclic ammonium salts (Id.).

Here, the claimed aqueous alkali solutions of sodium hydroxide, potassium hydroxide, calcium hydroxide, calcium oxide, magnesium carbonate, ammonium carbonate, sodium carbonate, sodium hydrogen carbonate, and potassium hydrogenate, fall into none of the above-mentioned relationships recognized by the Federal Circuit to establish them as homologs of the trialkali metal orthophosphates of Bender et al. The claimed alkali solutions are not chemically homologous to that of Bender et al., and therefore it would not have been obvious to substitute one of the claimed alkali solutions for the trialkali metal orthophosphates of Bender et al. Therefore, and like in Jones, there exists no *prima facie* case of obviousness over Sogabe in view of Bender et al., and Sogabe in view of Bender et al. neither anticipate nor suggest the claimed method of treating whole fish with an aqueous

alkali solution of sodium hydroxide, potassium hydroxide, calcium hydroxide, calcium oxide, magnesium carbonate, ammonium carbonate, sodium carbonate, sodium hydrogen carbonate, potassium hydrogen carbonate, and combinations thereof. Accordingly, withdrawal of this ground of rejection is respectfully requested.

In addition, neither Bender et al, Sogabe, not any combination thereof disclose or suggest the invention as claimed in Claim 27 for the reasons stated above and for the following reasons.

In light of the discussion above, Sogabe requires the development of a color of the carotenoid pigment into red (See column 2, lines 28-59). Therefore, Sogabe requires the presence of a carotenoid pigment in the body of the crustacean is critical to the prevention of dark spots on such a body when exposed to the alkali solution (see the Abstract, column 2, lines 28-59, column 9, lines 1-6, and Claim 1). Accordingly, the organisms to be treated according to the method disclosed by Sogabe must originally contain a red color as result of the presence of a carotenoid pigment therein.

In direct contrast, Claim 27 relates to a method of preventing whole fish from browning or darkening where the whole fish originally has white skin. Therefore, the whole fish according to Claim 27 can not possibly contain the carotenoid pigment that is critical to the method according to Sogabe. As a result, Sogabe overtly teaches away from the claimed method; and therefore, can not possibly disclose or suggest the claimed method.

For these reasons and the reasons stated above, Sogabe can not possibly be combined with Bender et al to obtain the claimed method.

*In arguendo*, Sogabe when combined with Bender et al may disclose, at best, a method of treating fish originally having a red carotenoid pigment in its skin. Such a combination continues to teach away from the claimed invention because Sogabe discloses the criticality of the presence of the carotenoid pigment the skin of treatable fish. In direct

contrast, Claim 27 specifies that the whole fish originally have a white skin. Therefore, such a fish can not possibly be treated by the method according to Sogabe alone or in any combination with Bender et al because a whole fish originally have a white skin may not be a fish having a red carotenoid pigment in its skin. How can one color develop a red pigment in the skin due to a carotenoid pigment in the skin when such a carotenoid pigment is absent from the skin?

In light of the above, no combination of Sogabe alone, or with Bender et al, disclose or suggest the claimed invention. Therefore, for the reasons stated above, Claim 27 should be allowed as well.

The rejection of Claim 8 under 35 U.S.C. § 112, first paragraph, is believed to be obviated by the amendment. Claim 8 has been amended in order to replace the recitation of "of no less" with --higher--. Accordingly, withdrawal of this ground of rejection is respectfully requested.

The rejection of Claim 36 under 35 U.S.C. § 112, first paragraph, is traversed below. The Examiner states that the limitation recited in Claim 26 is not supported at page 20 of the specification. However, the disclosure at page 20, combined with page 15, lines 1-5, does support the limitation in Claim 26. Accordingly, withdrawal of this ground of rejection is respectfully requested.

The rejection of Claims 9, 11, 12, 14, and 16-19 under 35 U.S.C. § 112, second paragraph, is believed to be obviated by the amendment. These claims have been amended in order to remove the recitation of "the fry" or "the treated fry" and replace the same with --the whole fish-- or --the treated whole fish--, respectively. Further, Claim 18 has been amended in order to clarify which steps occur "after" the washing or neutralizing. Accordingly, withdrawal of this ground of rejection is respectfully requested.

The objection to the Abstract of the Disclosure is obviated by the amendment and the substitute Abstract of the Disclosure submitted herewith. No new matter is believed to be introduced by the submission of the substitute Abstract of the Disclosure. Accordingly, withdrawal of this ground of objection is respectfully requested.

Applicants submit that the present application is now in condition for allowance. Early notice to this effect is earnestly solicited. If there are any further matters that must be addressed regarding the prosecution of the present application, Applicants respectfully request that the Examiner contact the attorney of record.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



Norman F. Oblon  
Attorney of Record  
Registration No. 24,618

Thomas W. Barnes III, Ph.D.  
Registration No. 52,594



**22850**

(703) 413-3000  
Fax #: (703) 413-2220  
NFO/JK/TWB:smi  
I:\atty\Twb\2002\5-02\16360021-AM-b.wpd

**Marked-Up Copy**  
Serial No: 09/547,223  
Amendment Filed on:  
HEREWITH

IN THE ABSTRACT OF THE DISCLOSURE

--Please delete the original Abstract of the Disclosure at page 27 in its entirety and insert the substitute Abstract of the Disclosure attached hereto.--

IN THE CLAIMS

Please amend the claims as follows.

--7. (Amended) A method of treating a [fry] whole fish, wherein the [fry] whole fish is immersed in a solution of from 0.1 to 6.0% salt water at a temperature no greater than 10°C for a time of from 30 minutes to 24 hours before treating the [fry] whole fish according to the method of Claim 1.

8. (Amended) The method according to Claim 1, wherein the aqueous alkaline solution has a pH of [no less] higher than 7.0.

9. (Amended) The method according to Claim 1, wherein the [fry] whole fish are treated with the aqueous alkali solution from 1 minute to 24 hours at a temperature of from 0 to 10°C.

11. (Amended) The method according to Claim 1, wherein the time for the washing off of the aqueous alkali solution attached to the treated [fry] whole fish is from 1 minute to 24 hours.

12. (Amended) The method according to Claim 1, wherein the neutralizing of the aqueous alkali solution attached to the treated [fry] whole fish comprises spraying the alkali-treated [fry] whole fish with an acidic solution at a pH of from 4.0 to 6.6.

14. (Amended) The method according to Claim 1, wherein the neutralizing of the aqueous alkali solution attached to the treated [fry] whole fish comprises immersing the alkali-treated [fry] whole fish in an acidic solution at a pH of from 4.0 to 6.8.

16. (Amended) The method according to Claim 1, wherein the neutralizing of the aqueous alkali solution attached to the treated [fry] whole fish is performed during the course of boiling the [fry] whole fish in a solution of from 1 to 10% salt water by mass.

17. (Amended) The method according to Claim 1, further comprising any one of the steps selected from the group consisting of treating the [fry] whole fish with salt water, boiling the [fry] whole fish, draining the [fry] whole fish, cooling the [fry] whole fish, directly packing the [fry] whole fish in bags, and combinations thereof after the aqueous alkali solution attached to the treated [fry] whole fish is washed or neutralized.

18. (Amended) The method according to Claim 1, further comprising treating the [fry] whole fish with a solution comprising from 1 to 5% salt water for a time from 10 minutes to 5 hours at a temperature not greater than 10°C;



washing the [fry] whole fish with water;

draining the [fry] whole fish; and

drying the [fry] whole fish

wherein the treating, washing, draining and drying is performed after the aqueous alkali solution attached to the treated [fry] whole fish is washed or neutralized.

19. (Amended) The method according to Claim 1, wherein the [fry] whole fish is boiled at a temperature from 90 to 100°C for a time of from 1 to 10 minutes.--

--Claim 27 is added.--